DRAWINGS

Figure 1

Figure 2

Baseband representation

Power spectrum

$f_S/2$ f_S
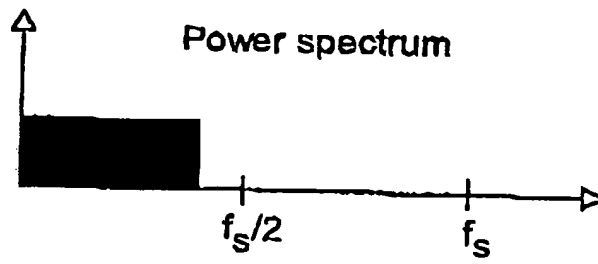
Equivalent low-pass representation

Power spectrum

$fc-f_S/2$ fc $fc+f_S/2$

Figure 3

Power spectrum

Degres: 1 ▧ 2 ▨ 3 ■

fc $2 fc$ $3 fc$

Figure 4

Power spectrum

fc_1 fc_2 fc_3 fc_4

Figure 5

Set
conservative
settings

Simulate
&
Capture

Determine
frequency
bands

Join
adjacent
bands

Figure 6

time ———▷ Oscillator

SignalGen ———▷ Mixer ———▷ Filter

Figure 7

—x▷ | H_1 | —y▷ | H_2 | —z▷

—x▷ | H | —z▷

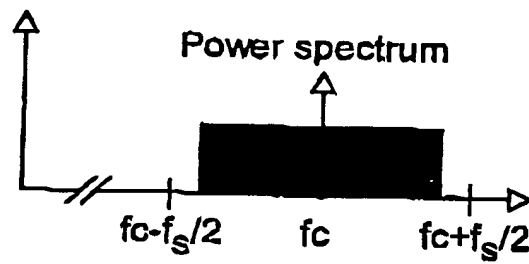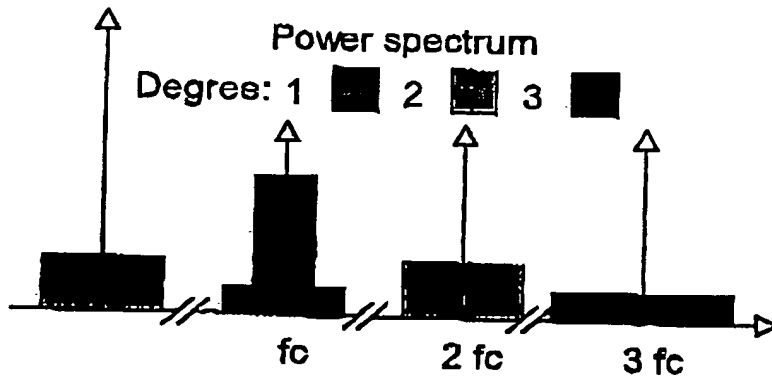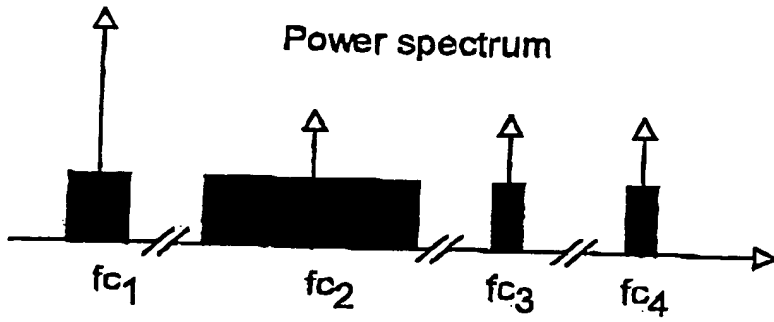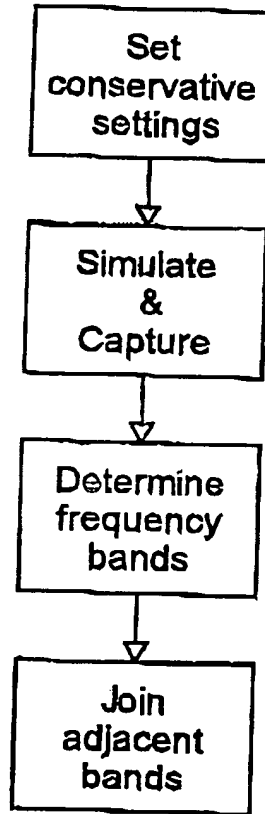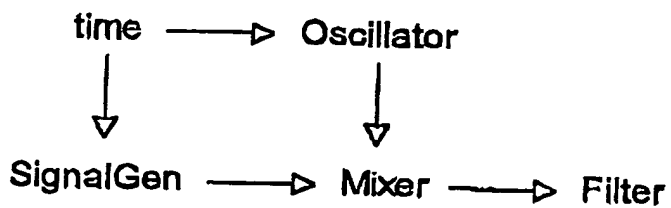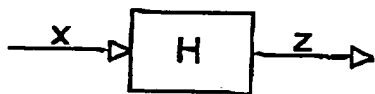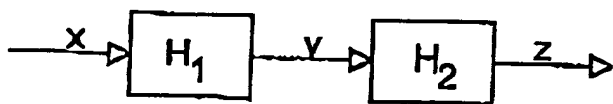$H = cascade\ (H_1,\ H_2)$

Figure 8
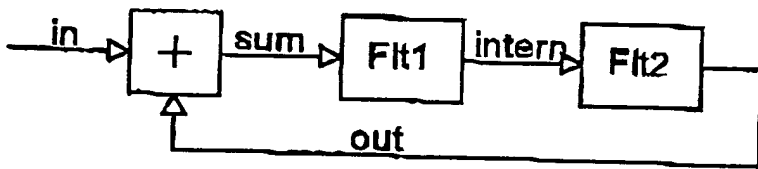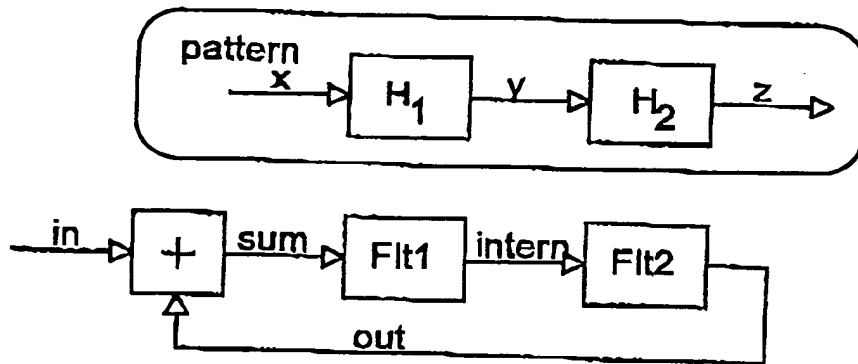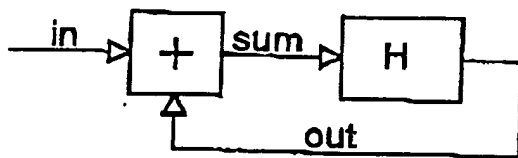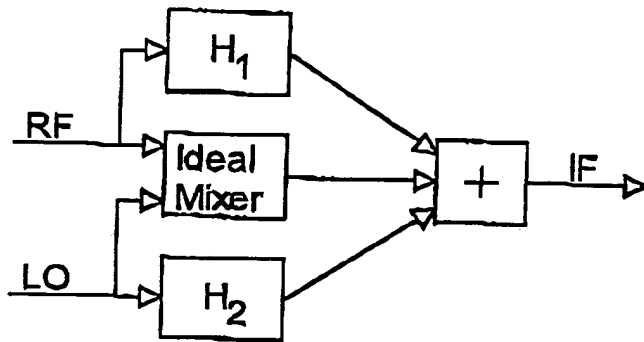
—in▷ | + | —sum▷ | Flt1 | —intern▷ | Flt2 |
out

Figure 9

Figure 10

Figure 11

Figure 12
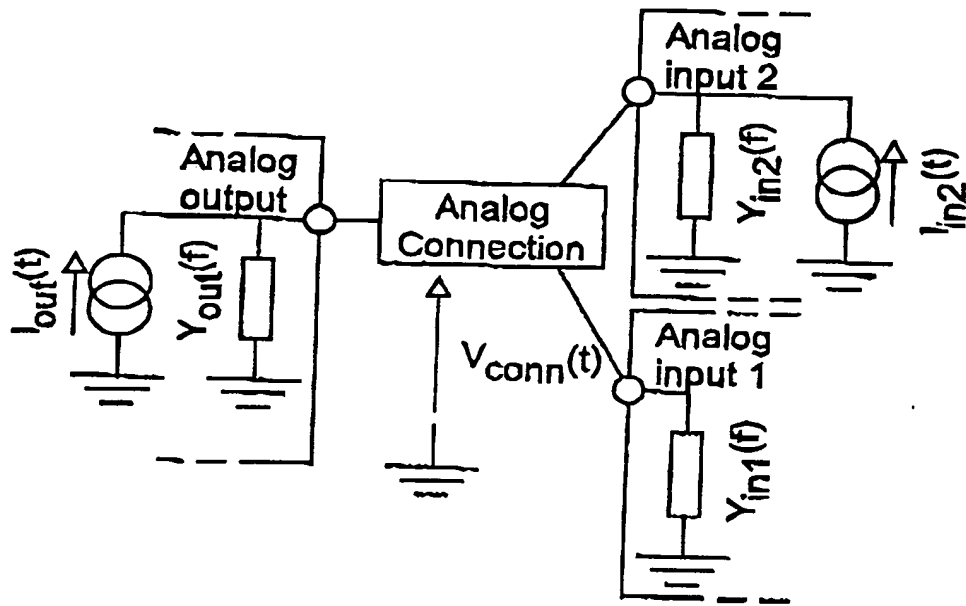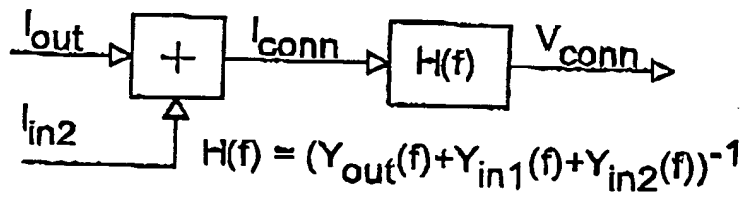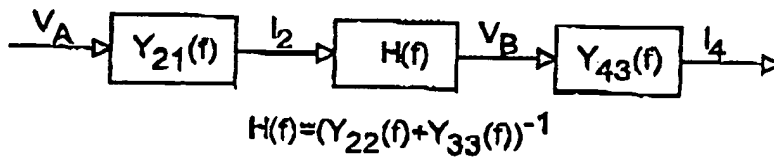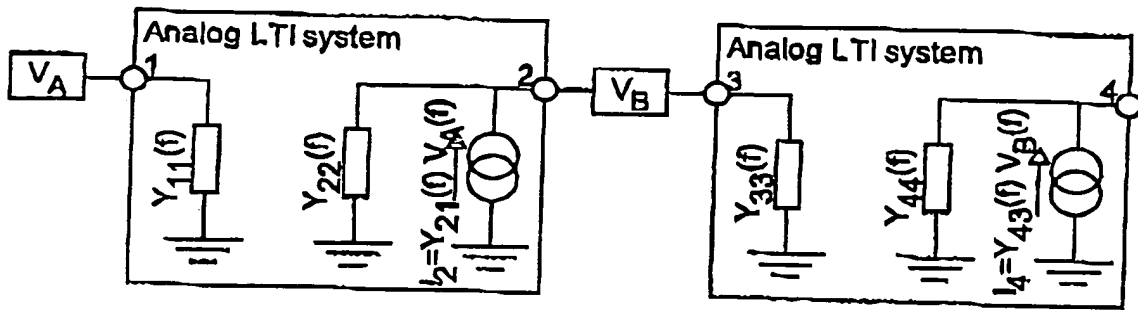
Figure 13

$$H(f) = (Y_{out}(f) + Y_{in1}(f) + Y_{in2}(f))^{-1}$$

Figure 14

Analog LTI system

V_A — 1

$Y_{11}(f)$

$Y_{22}(f)$ 2 V_B 3

$I_2 = Y_{21}(f) V_A(f)$

Analog LTI system

$Y_{33}(f)$

$Y_{44}(f)$ 4

$I_4 = Y_{43}(f) V_B(f)$

$V_A \rightarrow \boxed{Y_{21}(f)} \xrightarrow{I_2} \boxed{H(f)} \xrightarrow{V_B} \boxed{Y_{43}(f)} \xrightarrow{I_4}$

$$H(f) = (Y_{22}(f) + Y_{33}(f))^{-1}$$

Figure 15

in $\rightarrow \boxed{H} \rightarrow$ out

in $\rightarrow$ in[1] $\rightarrow \boxed{H} \rightarrow$ out[1]

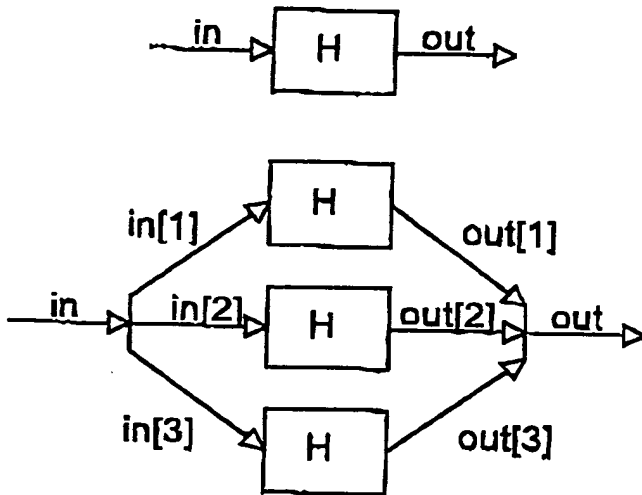in[2] $\rightarrow \boxed{H} \rightarrow$ out[2] $\rightarrow$ out

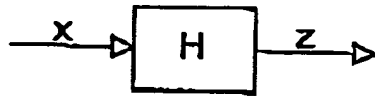in[3] $\rightarrow \boxed{H} \rightarrow$ out[3]
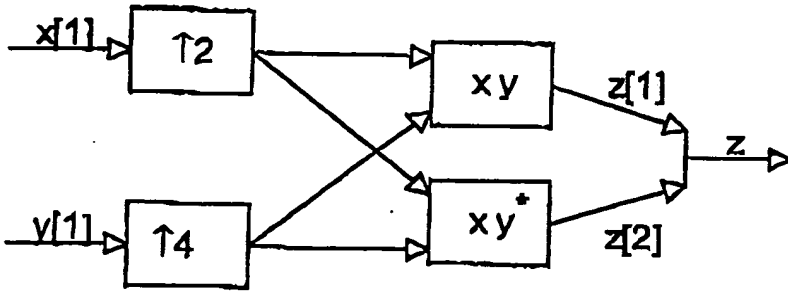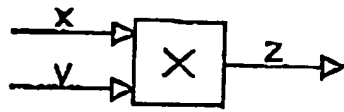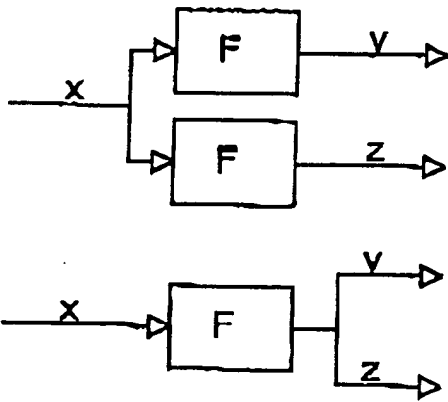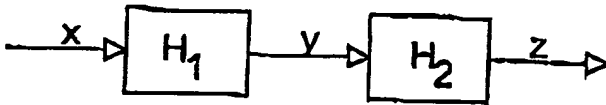
Figure 16

Figure 17
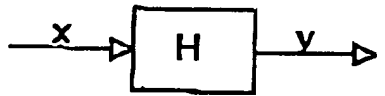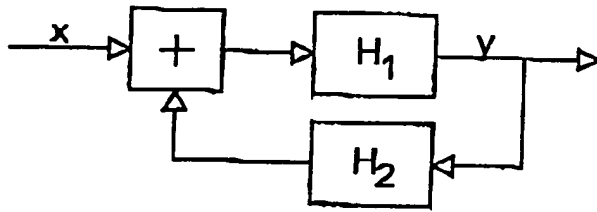
Figure 18
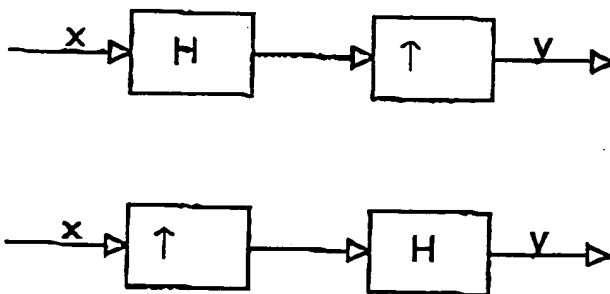
Figure 19
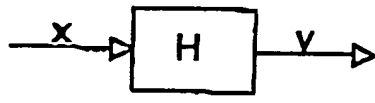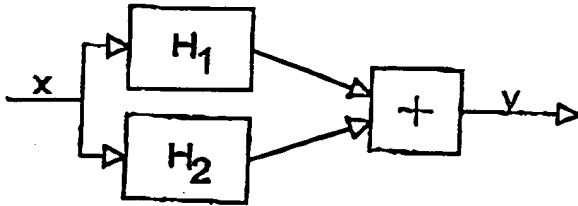
$$H = H_1 + H_2$$

Figure 20

$$H = \text{cascade} (H_1, H_2)$$

Figure 21

$$H = H_1 \,/\, (1 - H_1 \, H_2)$$

Figure 22
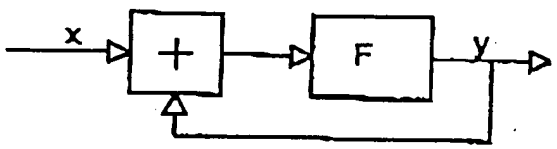
Figure 23
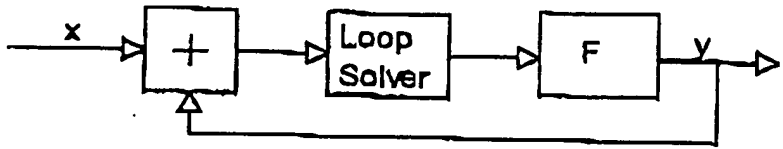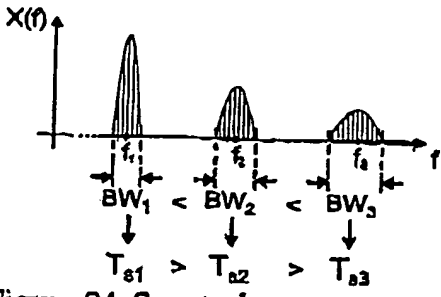
Figure 24: Spectral representation of an MRMC signal.
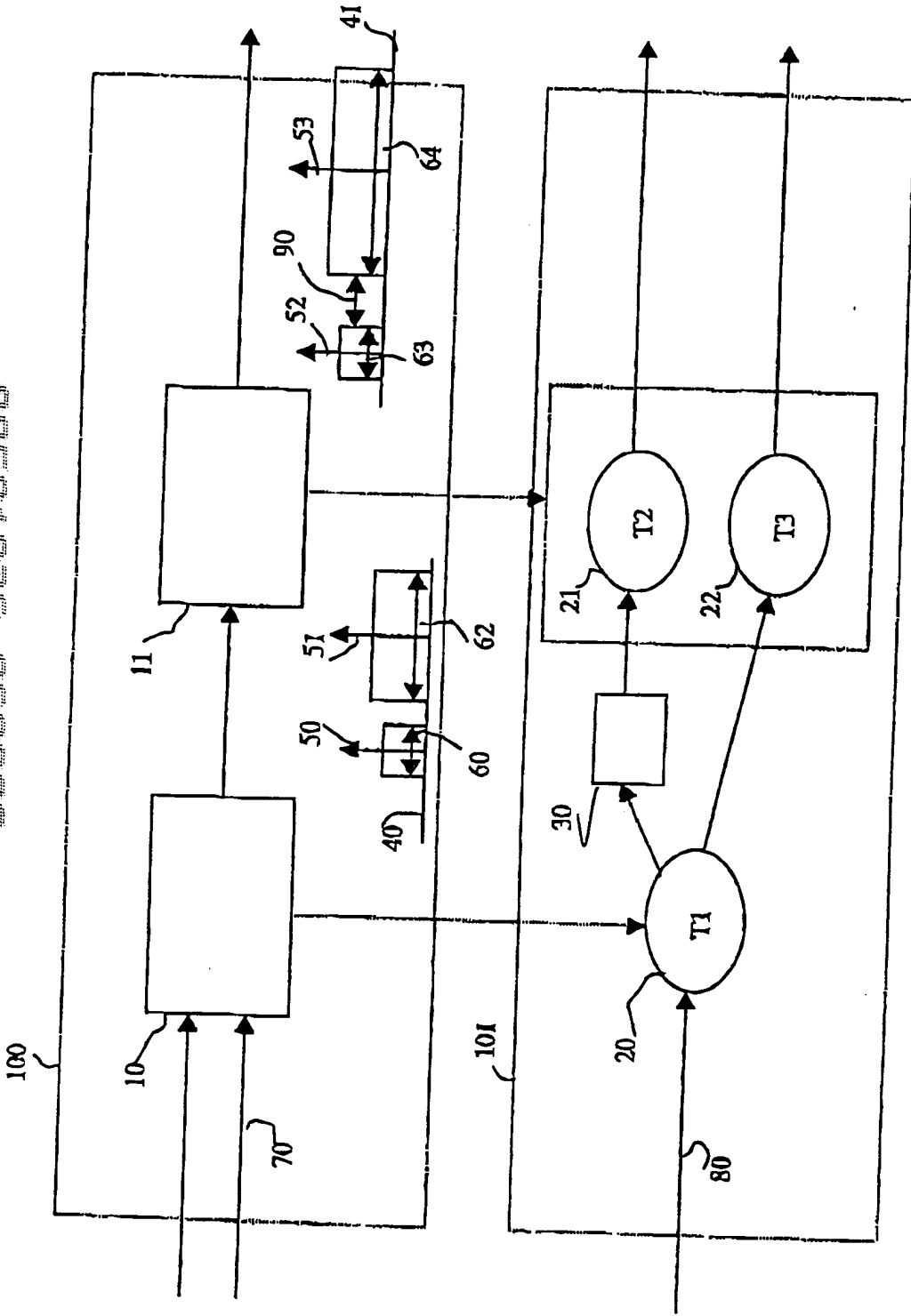
Figure 25

Figure 26

Input Circuit (graphical, text format)

Perform Preliminary Simulation

Determine signal representations

Simplify signal representations

Construct Computational graph

| Add up/down sampling nodes | Split linear subcircuits in plurality of nodes | Determine computation method for nonlinear circuits |

Scheduling of computation nodes – preferring vector processing modes

Executed Scheduled Computation Rules

Figure 27